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MESA provides mentors for Utah females and minorities

After-school program: Young women in the math, engineering and science program say it gives them confidence and support

 By **Shinika A. Sykes**
 The Salt Lake Tribune

Teresa Tuan bristles at any attempt to label her "precocious," "a genius" or "a prodigy."

The 15-year-old University of Utah senior prefers to think of herself as a young woman with a broad imagination and savantlike test-taking skills. In fact, she often notes she is an "average Utah teen" who loves pop culture and watches "way too much" television.

"I probably spend less time studying than most students but that's because I am good at absorbing materials," Tuan said.

"I find it best to understand a subject and not rely on memorization," said the teen, who as a college student is too young to get a driver license.

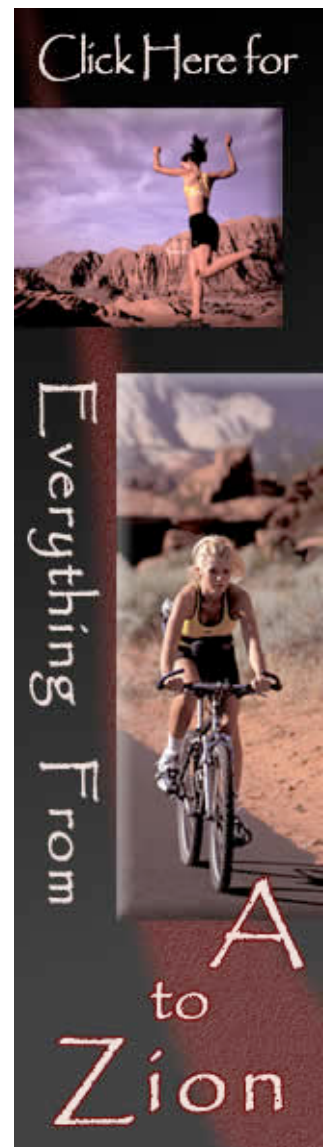
Tuan credits her academic success to supportive parents and friends, encouraging teachers and a little-known program called Utah MESA.

MESA - which stands for mathematics, engineering and science achievement - is an after-school program that targets female and ethnic minority students in grades seven to 12 who are interested and have the skills to succeed in math, science and technology-related studies. The intent is to offer female and minority role models for students who may never have learned science from anyone other than white men.

Through mentoring and tutoring opportunities, MESA students learn to



Cecilia Ahanonu joined MESA in seventh grade. She was not a strong math student at first, but through MESA she developed the necessary skills to earn good grades. She graduated from the University of Utah this year with a degree in health promotion and education, and works at the Utah Center for Reproductive Medicine in Research Park. (Ryan Galbraith/The Salt Lake Tribune)



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Through mentoring and tutoring opportunities, MESA students learn to defy the odds, becoming doctors, computer programmers and engineers.



Mexico native Alma-Nora A. Saucedo moved to Utah when she was 15. She mastered English as a second language and excelled in science classes. She graduated from Weber State University in May with a degree in clinical lab science and will pursue a degree in medicine next year. "If I hadn't found MESA, I don't know where I would be." (Ryan Galbraith/The Salt Lake Tribune)

"MESA gives you confidence so that no one can tell you what you cannot do," said Tuan, who joined the MESA program while a 14-year-old chemistry major at Salt Lake Community College. "Through MESA, I had the opportunity to interact and work with students who had similar interests but come from a variety of cultures and background.

"MESA teaches students who never thought they could go to college that they can and should," Tuan said.

Yet there was never any doubt that Tuan - a first-generation Taiwanese-American and an only child - would attend college. Tuan considers herself "lucky" because her parents have always

told her she could have any career she wanted.

That was not the situation for Alma-Nora A. Saucedo.

The Saucedo family, with six children, came to Utah as farm workers.

Saucedo's mother has only a second-grade education. Her father didn't complete first grade. She and her sister, Marisol, 25, are the first in their family to graduate from college.

Now 27, Saucedo graduated in May from Weber State University with a degree in clinical lab science. She now works as a medical technician at Brigham City Hospital. She is saving money to go to medical school next year.

"If I hadn't found MESA, I don't know where I would be," said Saucedo, pointing to the MESA adviser/mentor at Ogden's Ben Lomond High School who recognized her academic ability even as she struggled to learn English as a second language.

Saucedo remembers the day when she was invited to join the MESA club.

"I didn't think I could do it because I was still learning English," said Saucedo, who was 15 years old and newly arrived from Mexico.

Even as a student in Mexico, Saucedo said, she excelled in science classes. "It was the subject I got my highest grade," she said, then added, "I love science."

Carolyn Connell, a math professor and associate dean of arts and science at Westminster College, said whether it's MESA clubs or parental support, adolescent girls need to know "it's cool to do science and math."

Studies show that girls perform better than boys in math and science classes until they get to junior high school. By that age, studies suggest, girls



Teresa Tuan (Steve Griffin/The Salt Lake Tribune)

no longer seem interested or they are afraid to show their abilities, Connell said. "That's why it's so important for families to include activities that help reinforce young girls' interests in math and science."

The question of why the number of women in math and science research - including engineering, chemistry and genetics - has remained low came to the forefront recently when Harvard University President Lawrence Summers suggested that "innate differences of ability" might be part of the reason women are underrepresented in the top tiers of mathematics and science fields.

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Antonio Gonzales, a retired Granite School District educator and administrator, takes a wider view.

"The United States graduates a little more than 6,000 engineers a year, while China graduates more than 650,000," said Gonzales, who had a principal role in getting the MESA program started 20 years ago at John F. Kennedy

Junior High School in West Valley City.

"Ninety percent of Utah students who are involved in MESA go on the college," he said. "It's one of the premier ways for female and ethnic minority students to build their skills and confidence in mastering the hard sciences."

Gonzales has strong words for parents who, he says, take it for granted that when they drop their kids off at school, they have done their duty.

"Minority parents need to start asserting themselves . . . , and let school administrators know we want the best for our children, too," he said. "It pains me that MESA is not more widely known and supported."

Gonzales also isn't pleased MESA runs on a "shoe-string budget and has done from Day One."

Utah's MESA program has an annual operating budget of \$425,000 and is administered by the Utah Office of Education, explained Freddie Cooper, a former teacher who oversees the program at the state level.

School districts submit applications for funding to train secondary school teachers and counselors to identify and work with MESA students. Twelve Utah districts and two charter schools have MESA programs, Cooper said.

Currently, nearly 4,000 Utah students participate in MESA.

Utah has a higher education component of MESA, called STEP (science, technology, engineering programs). STEP aims at "home growing our own engineers," said director Kenneth Lee Petersen, whose office is at the U.

STEP is a nonprofit organization - made up of higher education

institutions, business/industries, public school districts, government agencies and community organizations - that backs MESA. MESA and STEP work together to increase the number of students pursuing rigorous course work, advanced study and possible careers in mathematics, engineering and science.

With assistance from an advisory board, consisting of 15 Utah engineering and science companies, Petersen seeks private donations and he awards as many as 20 to 25 \$1,000 scholarships annually to encourage women and ethnic minority students to enter the engineering field.

"I am committed to this program," he said. "I have seen wonderful results because it is driven by people who have a passion."

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MESA's goals and endeavors

Utah is one of eight states with MESA programs, which aim to boost the number of underrepresented and disadvantaged students achieving degrees in math, science and engineering. The programs also offer academic planning, community service, family involvement, hands-on engineering activities, career advising and field trips.

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1 Aim to boost the number of underrepresented and disadvantaged students achieving degrees in math, science and engineering.

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